

PI-3148
5-75

PLEASE CHECK ALL CARTON
LINERS FOR SMALL PARTS
AND HARDWARE BAGS.
THANK YOU

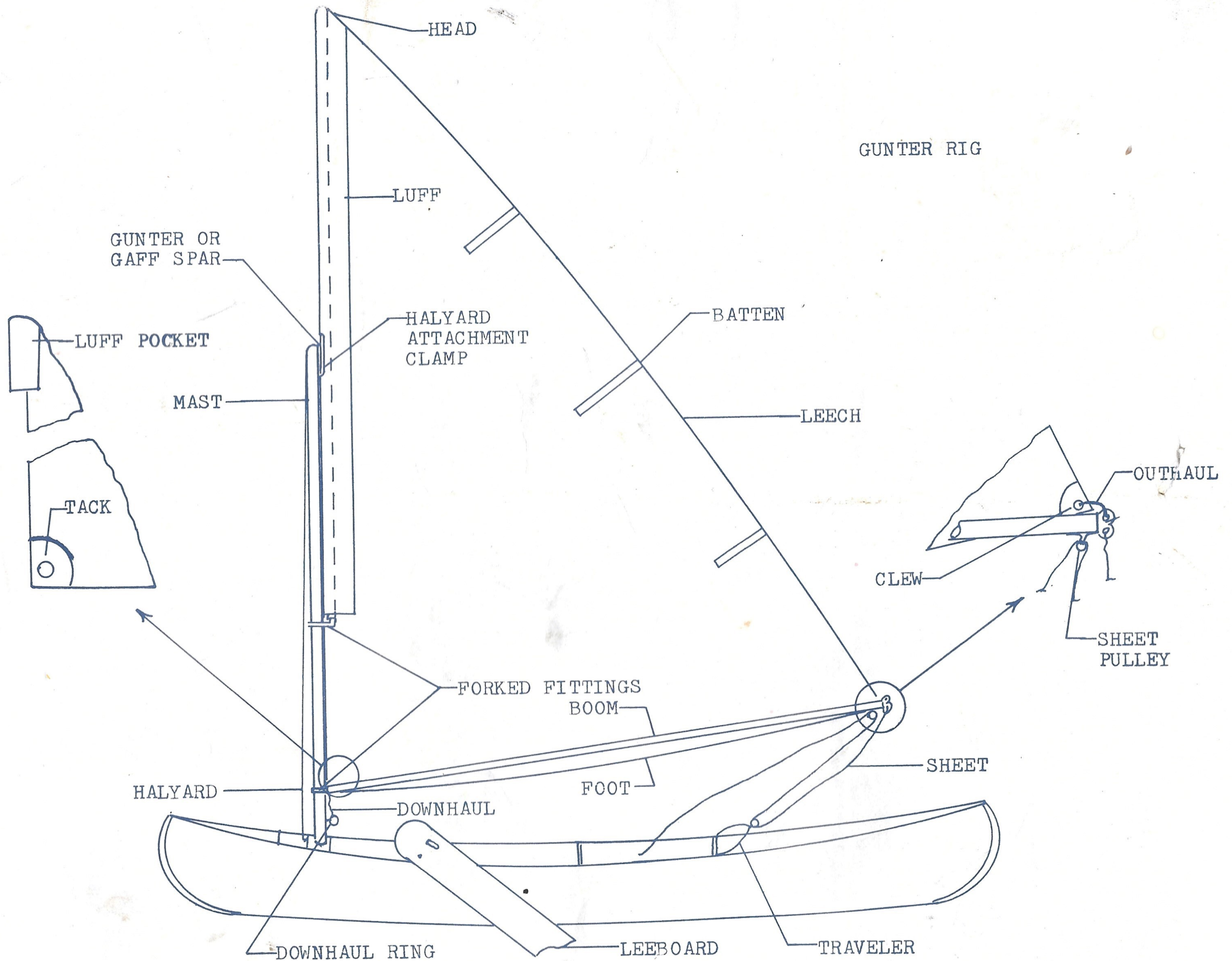


Gunter Sail Rig Instructions

Consists of:
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PI-89
PI-37
PI-48
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Grumman Boats

Marathon, N.Y. 13803



DIRECTIONS FOR ASSEMBLY OF GRUMMAN 65 SQUARE FOOT GUNTER SAIL

READ EACH STEP CAREFULLY AND CHECK WITH DIAGRAM AS YOU PROCEED.

The complete Gunter sail rig consists of the following (with attaching hardware):

1. Leeboards
2. Rudder
3. Mast Thwart
4. Mast Step
5. Gunter rig consisting of:
 - SAIL: Triangular, 65 square feet with sleeve in the luff, front of sail (see diagram).
 - MAST: 1-3/4" dia. aluminum tubing with square mast butt casting in one end and mast head eye at the other end.
 - GUNTER OR GAFF SPAR: 1-1/4" dia. tubing approximately 125 inches long, with a forked mast fitting at one end and a tubular halyard clamp near the center of the tube.
 - BOOM: 1-1/4" dia. tubing approximately 118 inches long with a forked mast fitting on one end and the sheet ring and pulley on the outboard end.
 - LINE BAG: (MB 67-10)
 - HALYARD 1/4 dia. x 30 ft. line
 - SHEET 5/16 dia. x 36 ft. line
 - TRAVELER 1/4 dia. x 5 ft. line
 - BOOM DOWNHAUL 1/4 dia. x 3 ft. line
 - CLEW OUTHHAUL 1/4 dia. x 2-1/2 ft. line
 - TRAVELER PULLEY Aluminum pulley and ring

Before assembling, we suggest that all aluminum parts be given a coat of automotive wax to prevent oxidation and possible staining of the sail.

INSTALL THE MAST STEP, MAST THWART, LEEBOARDS, AND RUDDER PER THE FOLLOWING INSTRUCTIONS:

Spread the sail out on a smooth and clean surface (see illustration for nomenclature and above for description of parts). Slide the Gunter spar (1-1/4" dia. tube with tubular halyard clamp) into the sleeve on the luff or forward edge of the sail, fork down. The tubular halyard attachment should fit in the lower part of the opening in the luff sleeve. The clamp can be adjusted by loosening the clamp bolt and nut. After adjustment of the clamp, retighten the bolt.

We have changed the design of the sail and omitted the sleeve for the boom (a 1-1/4" in diameter tubing with pulley). Place the boom along the foot, or bottom, of the sail. The forked fitting should be next to the Gunter spar and the pulley down. Remove the short pin from the small links near the forked fitting on the boom. Insert the tack of the sail (see diagram) between the links and secure with the pin. Stretch the foot of the sail tight by using the outhaul line to attach the clew of the sail to the upper loop on the outboard end of the boom.

65' SAIL RIG INSTRUCTIONS - Continued

(NOTE: For storage purposes, the sail may be either rolled up on the Gunter and boom spars or removed and stored separately. The sail should be dry before storing.)

Install the battens in the leech of the sail. The battens are inserted from the top edge of the batten pocket. There may be an elastic band in the pocket that must be stretched when installing the battens.

The sail is now ready to be installed on the boat. Lay the gaff, boom and sail lengthwise in the boat along with the mast. The square mast butt and forked spar fittings should be forward and near the mast thwart opening. The gaff with the sail luff and halyard clamp should rest on top of the boom. Pass one end of the halyard through the tubular halyard attachment clamp from the top or head end and tie an overhand knot below the bottom or tack end of the tube. Pass the other end through the mast head eye from the aft side of the mast, which is the side having the boom down-haul ring on it.

After dipping the mast butt in water for lubrication, pass it down through the gaff forked fitting, the boom forked fitting, the mast thwart, and into the mast step. The mast can be firmly seated by pulling up on the rear of the mast thwart while pushing down on the mast. If preferred, the mast may be stepped without passing it through the boom or gaff fittings. The forked spar fittings can then be looped around the mast by removing the long pins which should then be replaced.

Next tie one end of the traveler rope to one side of the stern thwart, pass the other end through the traveler pulley ring and allowing slack to clear the tiller or rudder lines, make this end fast to the opposite side of the thwart.

Take the sheet (5/16 line) and pass it through the sheet pulley on the boom from the forward side, through the traveler pulley, then to the lower loop on the outboard end of the boom and make it fast. The forward or loose end of the sheet should always be held in the hand when sailing, never made fast to anything.

The sail is now ready to hoist. With the bow pointed in the direction of the wind, hoist the sail by passing the halyard under the mast thwart and pulling on it until the halyard clamp is just under the mast head. Make the halyard fast to the bow seat or thwart.

The short down-haul rope is fastened to the loop on the underside of the boom at the forked fitting and made fast to the ring on the mast. In light air it is not necessary to use this but when sailing in a strong breeze, the boom should be snugged down tight.

Sail area can be reduced for sailing in strong winds by rolling up part of the sail on the boom. This must be done before attaching the boom to the mast and before rigging the sheet to the boom.

DIRECTIONS FOR GRUMMAN CANOE LEEBOARD USE

Canoe leeboards serve the same purpose as the keel or centerboard in boats designed specifically for sailing. In other words, when in the down position, they permit the boat to tack to the windward without yawing, or being blown sideways.

For best results they should be located on Grumman Canoes when using the Grumman 45 square foot Lateen sail as follows:

On the thirteen footer, the cross channel should be placed two to five inches aft of the bow seat.

On the fifteen and seventeen foot double enders, it should be placed between the bow seat and the bow thwart as close to the thwart as possible.

On the eighteen foot double ender and the seventeen foot square ender, it should be placed just aft of the bow seat.

When using the Grumman 65 square foot Gunter sail, they may be moved two or three inches aft of the lateen position. On the 15 foot Sport-canoe, they should be 8 or 10 inches aft of the bow seat.

To attach, lay the channel across the gunwales at the correct location, flanges up, with the two slots evenly spaced at each gunwale so that the cross channel is centered.

Take the two 5/16 diameter by one-inch carriage bolts and the two "U" shaped metal clips and place the bolts through the bottom of the clips with the head under the "U" so that the square bolt shoulder engages the square hole in the clip. Locate the clips so that the bolt goes through the slot in the cross channel inside the gunwales with one flange of the clip held against the underside of the gunwale and the other on the underside of the cross channel. Slip the 5/16 washer over the bolt and tighten the clips in place with the 5/16 wing nuts, making sure the cross channel is centered.

Take the two 3/8 inch bolts and feed these bolts through the square holes in each end of the cross channel with the bolts parallel with the channel, and with the head of the bolts toward the canoe. Work the wooden leeboards onto these bolts so that the hand hole is in the rear edge of the board. Secure with the 3/8 washer and wing or lever nut.

For general sailing both leeboards may be left in a vertical position or tilted slightly aft at all times; however, for maximum speed, both may be lifted when running dead before the wind and only the leeward board used when on a reach or tacking.

The locations indicated give the canoe a definite weather helm. To reduce the weather helm, the boards may be tilted aft or the whole cross channel moved a little aft. The canoe will come about slightly better if this is done but the leeboards should never be moved so far aft that the canoe will not head up into the wind when rudder is left free. Load distribution affects the positioning and optimum position with a given load should be determined by trial.

GRUMMAN CANOE RUDDER

ASSEMBLY & INSTALLATION INSTRUCTIONS

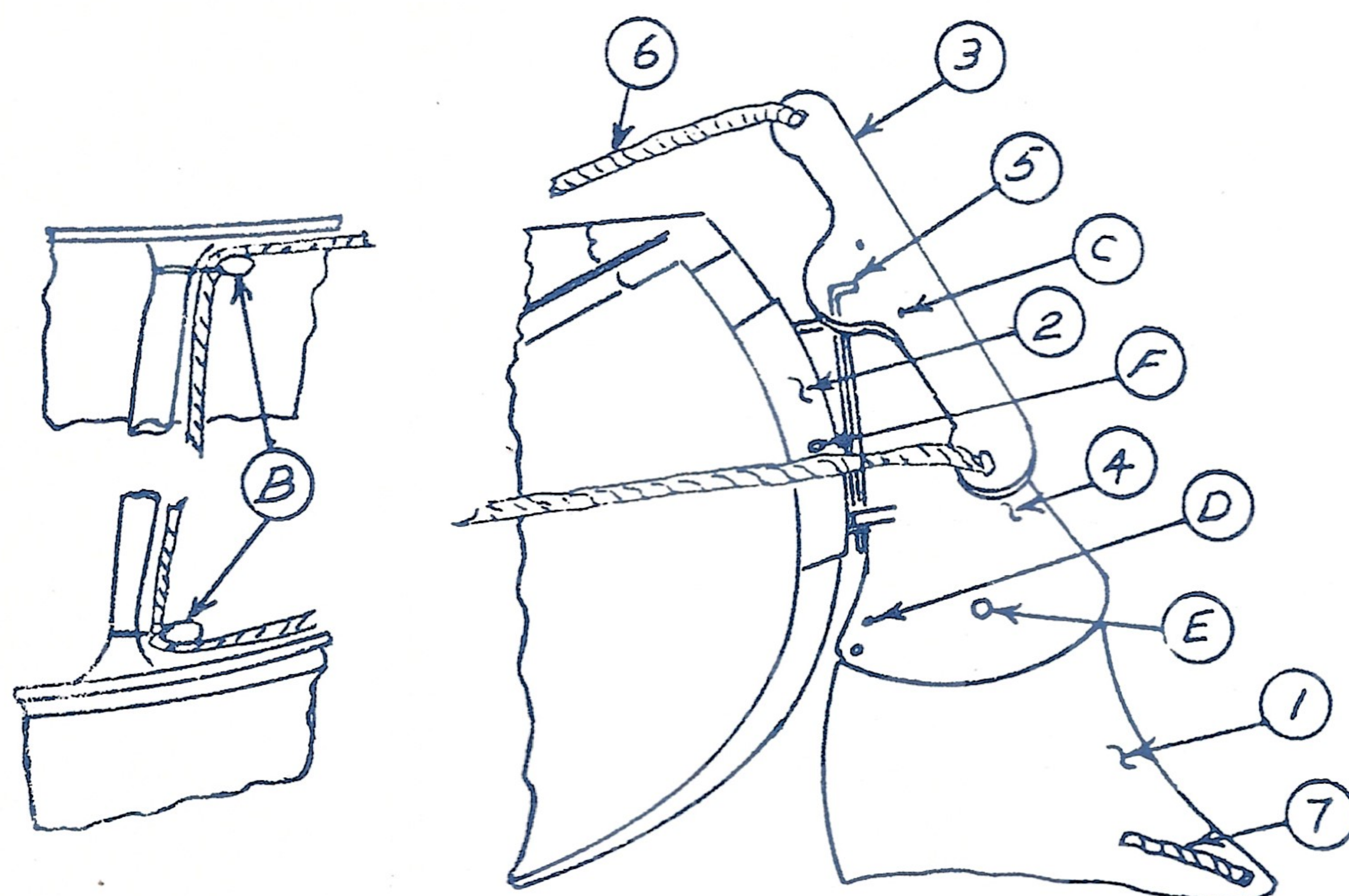


FIG. 1

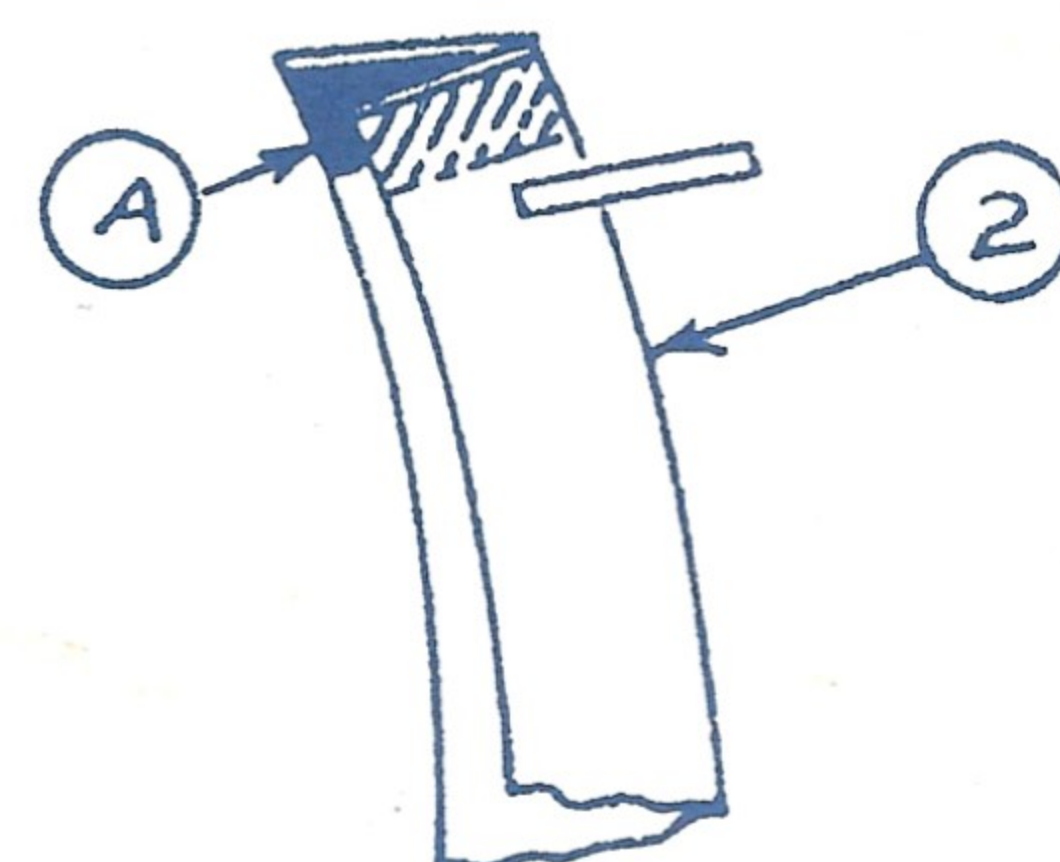


FIG. 2

YOUR RUDDER PACKAGE CONSISTS OF:

<u>ITEM NO.</u>	<u>ITEM NAME</u>	<u>QUANTITY</u>
1	Blade	1
2	Adapter	1
3	Tiller Bar	1
4	Blade Holder	1
5	Pin	1
6	Tiller Line, 21'	1 (Found in rudder line bag
7	Tilt Line, 8'	1 #MB42-99)

HARDWARE BAG NO. MB 42-41

A	Rubber Pad	2
B	Single Block	2
C	10-24 x 5/8" Mach. Screw	2
	10-24 Lock Nut	2
D	Blade Stop Pin	1 (10-24 x 5/8 Mach. Screw & Lock Nut
E	Pivot Bolt, 3/8-16 x 3/4	1
	3/8-16 Lock Nut	1
	3/8 I.D. Washer	1
F	Short Pin	1
	Split Ring	1

GRUMMAN CANOE RUDDER
ASSEMBLY & INSTALLATION INSTRUCTIONS

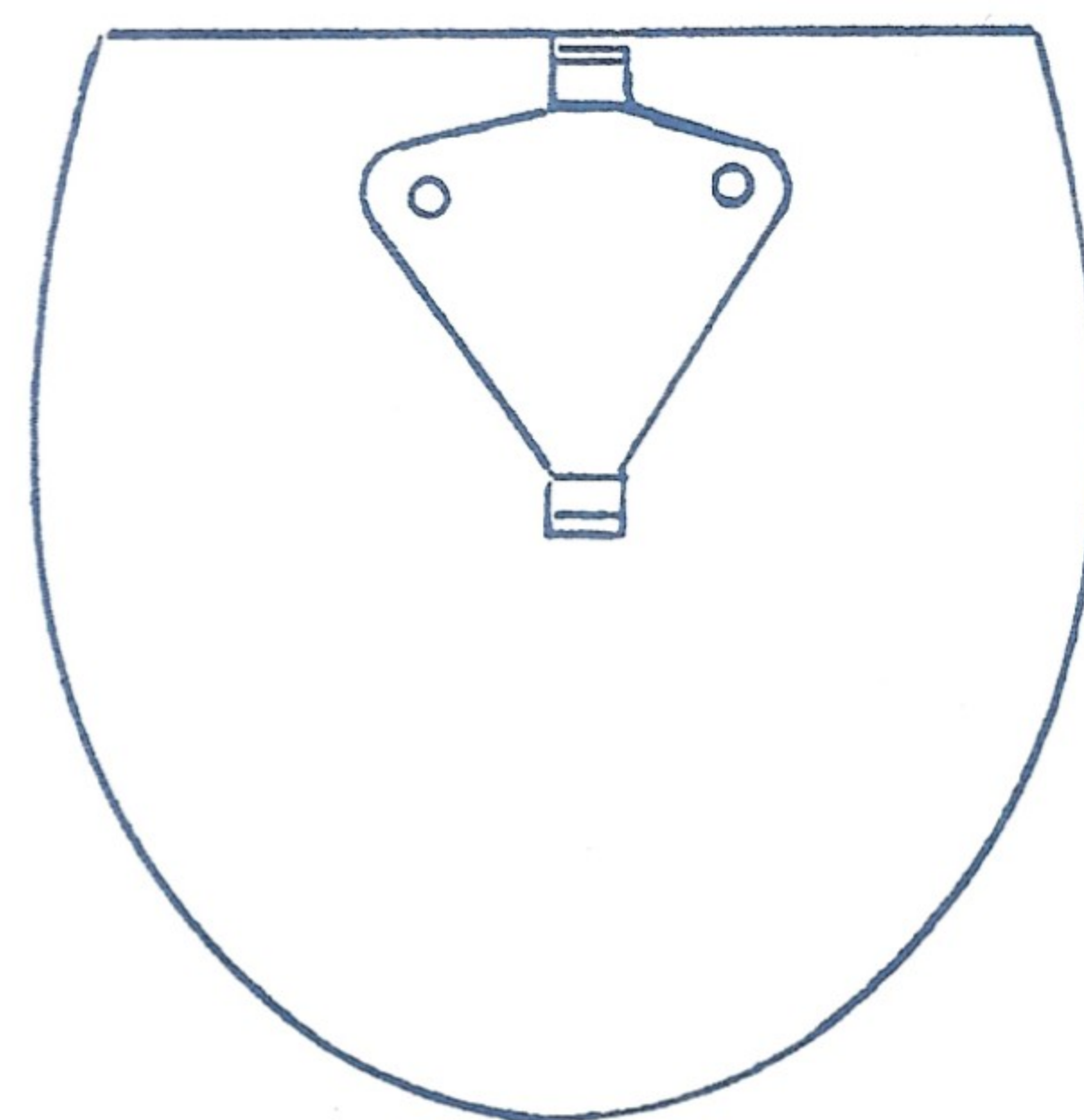
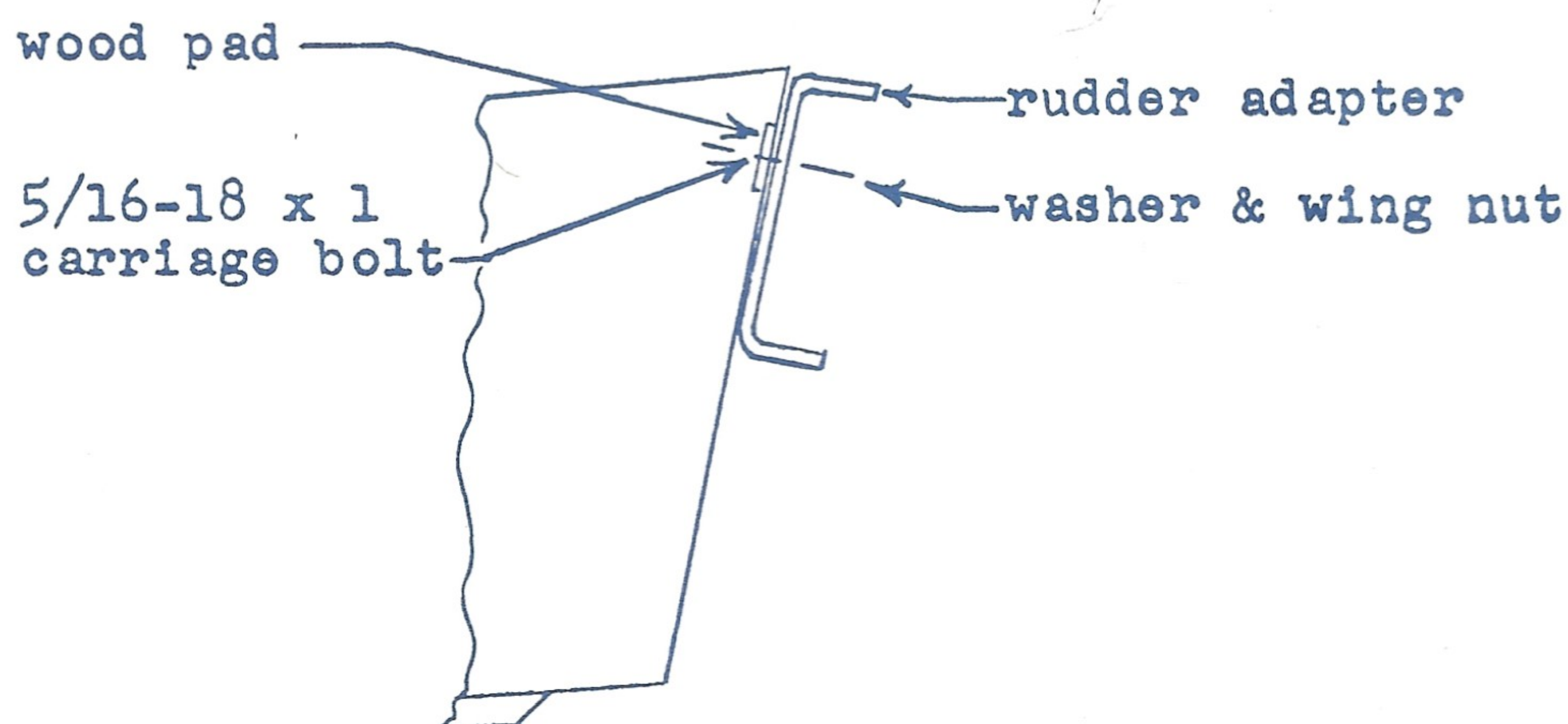
PI-42

- 1.) On 15' and 20' double-end canoes, use the rudder adapter (2) as it is furnished. On the 13', 17', and 18' double-end canoes, insert a rubber pad (A) in each end of the rudder adapter (2), as shown in Fig. 2. (Remove the paper backing and place the sticky side against the adapter.)
- 2.) Place the rudder adapter (2) over the stern of the canoe so the hole is lined up with the tie shackle hole. Pin the adapter in place with the short pin and split ring (F). On the 15' and 17' square stern canoes, remove the motor pad and fasten the diamond shaped adapter to the transom with the bolts and wing nuts. The wide part of the adapter should be on top. Your kit will contain either the curved adapter or the diamond shaped one depending on your canoe.

NOTE: A special rudder is used on the Sportcanoe and 19' square stern that does not require an adapter. (See Page 9)

- 3.) Fasten the tiller bar (3) to the blade holder (4) with the 10-24 x 1/2 machine screws (C) and lock nuts.
- 4.) Insert the blade stop pin (D) through the blade holder and fasten in place with the split ring. (The lower hole is used when more rudder leverage is desired and for use on the 17' square stern canoe.)
- 5.) Place the blade (1) in position and pass the 3/8" pivot bolt (E) through the blade holder and blade and fasten in place with corresponding washer and lock nut. Leave enough play so the blade pivots freely.
- 6.) Fit the rudder on the adapter with the tiller bar (3) over the top gudgeon and fasten by dropping the pin (5) into place. Lock the pin by swinging the holding strap on the tiller bar over top of pin.
- 7.) Using light line, tie a block (B) to each end of the center thwart. Wrap several turns tightly around the narrow part of the thwart before fastening the block to the line.
- 8.) Tilt line (7) is used to raise the rudder blade when water shoals. Fasten as shown in Fig. 1 and lead into the canoe.
- 9.) Run the tiller line (6) from one side of the tiller bar through the blocks and back to the opposite side of the tiller bar as shown. Trim to the desired length and fasten.

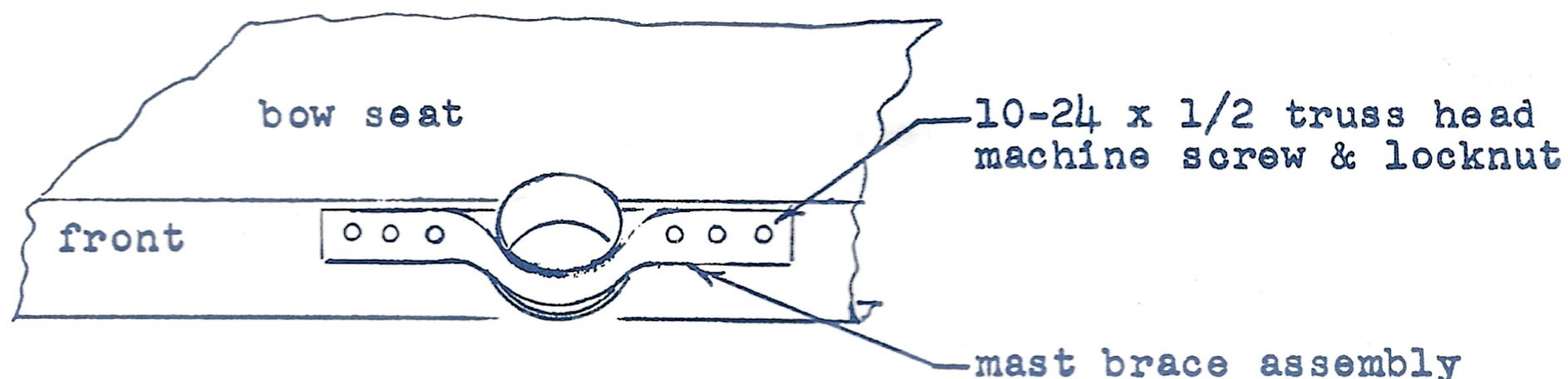
MB 82-1 RUDDER ADAPTER INSTALLATION 15 & 17 Ft. SQUARE STERN CANOES



1. Remove the motor block and transom pad.
2. Install the rudder adapter as shown.
3. Install the rudder following the rudder instructions.

PI-89

MB 89 MAST BRACE ASSEMBLY INSTALLATION 20 Ft. CANOE & 19 Ft. SQUARE STERN



1. Open the 6 holes in the front flange of the bow seat to accept the machine screws, use a #10 or a 3/16 Dia. drill.
2. Install the mast brace as shown.

PI-37

INSTALLATION OF GRUMMAN CANOE MAST STEP

The mast step casting is bolted to the mast step clip. This is found riveted to the bottom of the canoe, over the keel, between the bow seat and forward bulkhead.

Place the mast step casting on the mast step clip and attach with the four machine screws and nuts provided. If the canoe has floorboards, it will be necessary to remove them first. They can be reinstalled by cutting a square hole in them to fit around the installed step.

RUDDER ASSEMBLY FOR 19 FT. SQUARE STERN AND SPORTCANOE

The rudder assembly consists of the following items:

		<u>19' Sq. St.</u>	<u>Sportcanoe</u>
MB42-1	Blade	1	1
MB48-1	Flange Assembly with pivot bolt	1	1
MB48-7	Tiller Bar	1	-----
MB48-23	Hardware Bag	1	-----
MB42-99	Line Bag	1	-----
MB48-17	Tiller Assembly	-----	1

Assembly Instructions

Remove the pivot bolt from the flange assembly and insert the blade (the hole near the edge should be down and away from the pintles). Replace the pivot bolt and tighten the lock nut. The ease with which the blade kicks up is controlled by the tightness of the nut on the pivot bolt.

The rudder is put on the canoe by placing the lower pintle in the gudgeon on the lower part of the transom and the upper pintle in the hole in the top of the transom.

On the Sportcanoe, the tiller is attached by hooking it over the head of the flange, with the bolt in the tiller through the slot in the head of the flange.

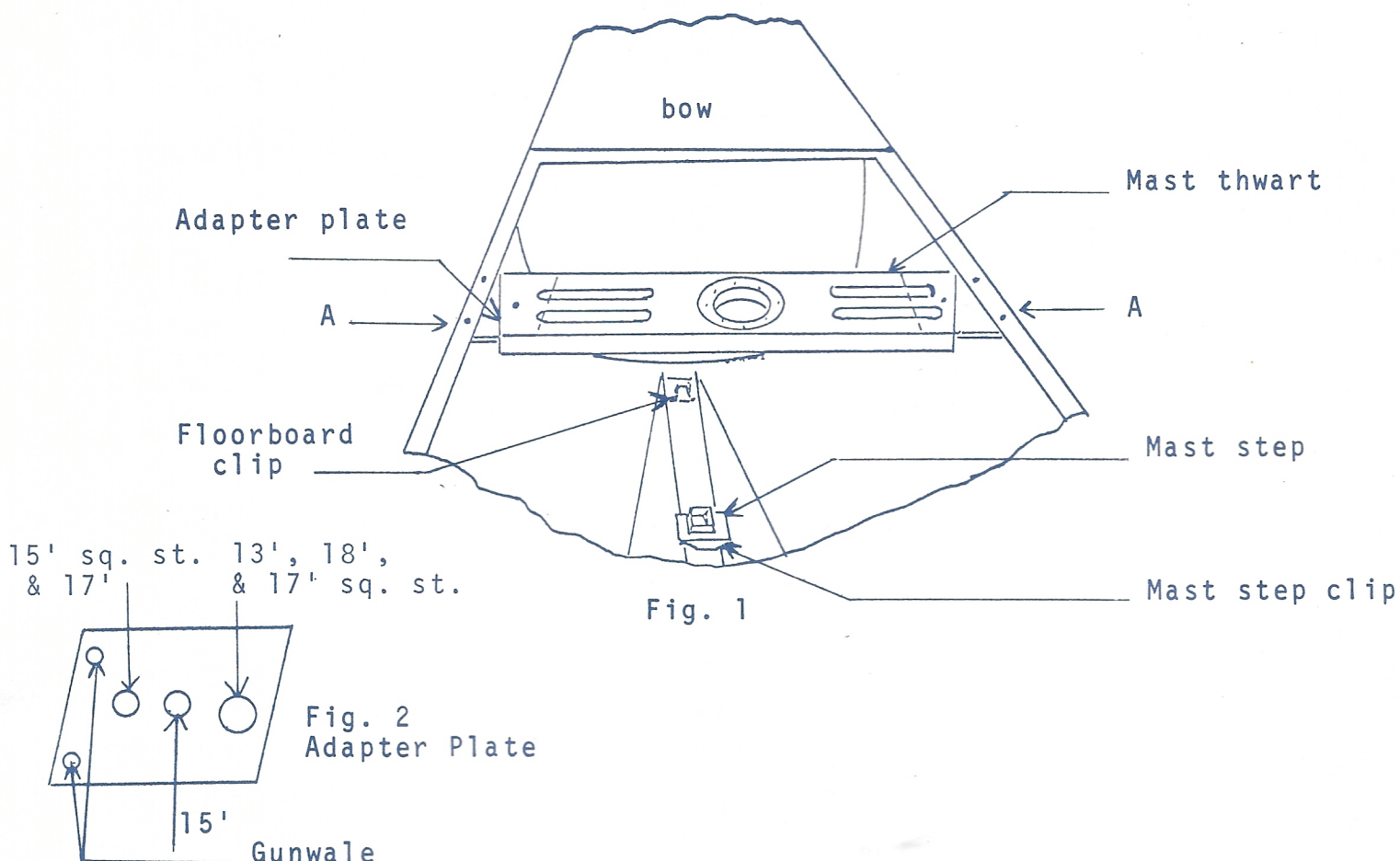
On a 19 ft. square stern, attach the tiller angles (found in the hardware bag) on either side of the top of the flange assembly, using the #10 machine screws and lock nuts provided. Fasten the tiller bar to the top of the angles using the remaining machine screws and lock nuts.

The two pulleys are attached to either the center or stern thwart of the canoe. Use light line (not provided) to lash a pulley to each end of the desired thwart.

Attach the tiller line (the long line in the line bag) to one end of the tiller bar. Lead the loose end forward and through the pulleys, then back to the other end of the tiller bar. Trim to the desired length and fasten.

The shorter line is attached to the rudder blade through the hole in the rear of the blade. It is led up over the tiller bar and into the canoe. It is used to hold the blade up while launching and recovering the canoe.

INSTALLATION OF GRUMMAN CANOE MAST THWART



Position the adapter plates inside the mast thwart so that the gunwale holes are exposed at the edge. Insert the 1/4-inch diameter machine screw through the mast thwart and the proper hole in the adapter plate, see Fig. 2, add the washer and lock nut. Do not tighten at this time. Repeat with the other adapter plate.

Install the mast thwart, with the adapter plates, in the canoe. The adapter plates fit under the gunwales at point "A", Fig. 1, between the bow (front) seat and bow deck. They are secured to the gunwales with 10-24 machine screws and lock nuts, 2 per side.

On the 13', 18', and 17' sq. st., check to see that the mast opening is centered over the mast step. Tighten all machine screws and lock nuts.

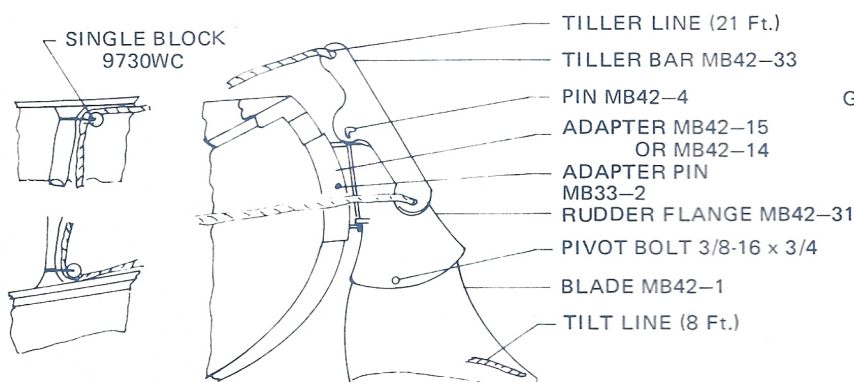
Insert the rubber grommet so that both flanges are outside the metal collar.

The Grumman 20' canoe and the 19' square-stern canoe use a bracket bolted to the front edge of the bow seat in place of a mast thwart. The Sportcanoe has a one-piece mast thwart that is attached to the gunwales the same as the adapter plates.

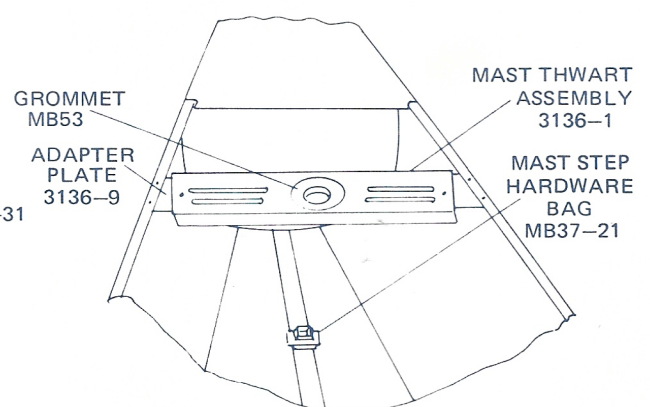
SAIL RIG PARTS

NAME OF PART	UNIVERSAL	20' STANDARD	15' & 17' SQUARE	19' SQUARE	SPORTCANOE
BOOM CLIP (LATEEN)	1640BA	—	1640BA	—	—
BOOM CLIP PACKAGE	MB66-12	—	MB66-12	—	—
LEEBOARD ASS'Y	MB43-1	MB43-1	MB43-1	MB43-1	MB43-11
LEEBOARDS (PAIR)	3121-3	3121-3	3121-3	3121-3	3121-3
LEEBOARD CLAMP	MB43-6	MB43-6	MB43-6	MB43-6	MB43-6
LEEBOARD HDWE BAG	MB43-9	MB43-9	MB43-9	MB43-9	MB43-9
LEEBOARD LEVER NUT	5029-1	5029-1	5029-1	5029-1	5029-1
LEEBOARD SPREADER BAR	MB43-2	MB43-2	MB43-2	MB43-2	MB43-8
LINE BAG, GUNTER	MB67-10	MB67-10	MB67-10	MB67-10	MB67-10
LINE BAG, LATEEN	MB66-99	—	MB66-99	—	—
MAST, GUNTER	3141-3	3141-3	3141-3	3141-3	3141-3
MAST, LATEEN	3142-3	—	3142-3	—	—
MAST BRACE ASS'Y	—	MB89	—	MB89	—
MAST STEP CASTING	MB37-21	MB37-21	MB37-21	MB37-21	MB37-21
MAST THWART ASS'Y KIT	3136-1	—	3136-1	—	MB96
RUBBER GROMMET	MB53	MB53	MB53	MB53	MB53
RUDDER ASS'Y	MB42-37	MB42-39	MB42-43	MB48-21	MB48
RUDDER ADAPTER	MB42-15	MB42-14	MB82-1	—	—
RUDDER ADAPTER PIN	MB33-2	MB33-2	—	—	—
RUDDER BLADE	MB42-1	MB42-1	MB42-1	MB42-1	MB42-1
RUDDER FLANGE ASS'Y	MB42-31	MB42-31	MB42-31	MB48-1	MB48-1
RUDDER HDWE BAG	MB42-41	MB42-41	MB42-41	MB48-23	—
RUDDER LINE BAG	MB42-99	MB42-99	MB42-99	MB42-99	—
RUDDER PIN	MB42-4	MB42-4	MB42-4	—	—
RUDDER PIVOT BOLT	3/8-16 X 3/4 HEX HEAD WITH LOCK NUTS AND WASHER				
RUDDER TILLER	MB42-33	MB42-33	MB42-33	MB48-7	MB48-17
SAIL, GUNTER	MB63-4	MB63-4	MB63-4	MB63-4	MB63-4
SAIL, LATEEN	MB62	—	MB62	—	—
SPAR, GUNTER BOOM	3141-7	3141-7	3141-7	3141-7	3141-7
SPAR, GUNTER GAFF	3141-5	3141-5	3141-5	3141-5	3141-5
SPAR, LATEEN BOOM	3142-7	—	3142-7	—	—
SPAR, LATEEN GAFF	3142-5	—	3142-5	—	—
TRAVELER PULLEY	01-07SH	01-07SH	01-07SH	01-07SH	01-07SH

CANOE TILT RUDDER



MAST THWART



<u>PART NUMBER</u>	<u>LIST PRICE</u>
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MB33-2	\$.25
MB37-21	2.65
MB42-1	11.00
MB42-4	1.05
MB42-14	7.05
MB42-15	4.80
MB42-31	7.25
MB42-33	4.90
MB42-37	36.30
MB42-39	36.30
MB42-41	9.10
MB42-43	36.30

<u>PART NUMBER</u>	<u>LIST PRICE</u>
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MB42-99	4.00
MB43-1	50.00
MB43-2	19.35
MB43-645
MB43-8	20.50
MB43-9	7.65
MB48	36.30
MB48-1	28.25
MB48-7	5.10
MB48-17	7.25
MB48-21	36.30
MB48-23	9.10

<u>PART NUMBER</u>	<u>LIST PRICE</u>
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MB53	1.35
MB62	70.80
MB63-4	116.25
MB66-12	5.20
MB66-99	5.00
MB67-10	9.50
MB82-1	7.05
MB89	5.65
MB96	11.25
MB96-3	2.50
1640BA20
3121-3	30.25

<u>PART NUMBER</u>	<u>LIST PRICE</u>
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3136-1	12.50	
3141-3	22.10	
3141-5	20.60	
3141-7	20.60	
3142-3	17.55	
3142-5	18.15	
3142-7	18.15	
5029-1	2.00	
01-07SH ...	3.50	
3/8-16 x 3/4 Hexhead with Lock Nuts and Washer50

Grumman Boats

Marathon, N.Y. 13803